

**IMPROVED STATOR CONSTRUCTION FOR
HIGH PERFORMANCE ROTATING MACHINES**

ABSTRACT OF THE DISCLOSURE

5 A rotating machine is provided which includes a stator having a number of
field winding slots; a number of field windings disposed in each of the field winding slots,
at least two of the field windings have: an outer jacket; and a number of conductive wires
disposed within and enclosed by the outer jacket such that longitudinal passages are
defined between the conductive wires; and circulation means for circulating a coolant into
and from the rotating machine through the longitudinal passages. Preferably, the rotating
10 machine further includes a housing which has a cavity for acceptance of the stator therein.
The housing and stator define first and second plenums at first and second ends of the
stator. The coolant enters the rotating machine into the first plenum and exits the rotating
machine from the second plenum.